Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



\sim	4	4 *	
(· O	rtiti	cation	١
\mathbf{c}	I LIII	Cauci	

CX Ref #: Energex WR#:	
Date: / /	
Embedded Generation via RM > 30 kVA and ≤ 1,500 kVA – Project Name: Location: NMI:	
I certify that as a Registered Professional Engineer of Queensland and by virtue that the submission documentation complies with the requirements of the late	
 Energex's Technical Study Report provided for the above stated prospective. STNW1174 - Standard for LV Embedded Generating Connections [AS/NZS 3000 – Electrical Installations AS 60034.1 Rotating electrical machines, Part 1: Rating and perform Queensland Electricity Connection Manual [version] 	version]
In addition to the above, the following attachments have been submitted as pa	art of the application:
 Attachment 1 – Engine/Turbine/Alternator Specifications & Checklis Attachment 2 – Compliance Checklist Attachment 3 – Commissioning Test Results Attachment 4 – As Commissioned Drawings 	t
Signature:	
	RPEQ Engineer Name
	Registration Number
	Professional Title
	Company Name
	Company Address
	Contact Details

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 1 – Rotating Machine Specifications & Checklist

Installation details	Data
Customer Name	
Customer contact details	
Energex contact	
Installation approved capacity (kVA)	
Installation approved export (kW)	
Installed capacity (kVA) (Must not exceed approved limit)	
Installed export power limit (kW) (Must not exceed approved export)	
Subject description (plant information) e.g. stand-by generator at shopping village	

As installed - Engine Technical Data

Parameters	Data
Engine/Turbine type	
Make	
Model	
Rated Power (kWe/kWm)	
Rated Voltage (V)	
Rated Current (A)	

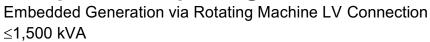
Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

As Installed - Alternator Technical Data

Parameters	Data
Make	
Model	
Rated Power (kVA)	
Rated Current (A)	
Rated Voltage (V)	
Peak Short Circuit Current (kA)	
Manufacturer's specification data sheet/user manual attached As Installed – Generating System	Yes No
Description	Data
Complies with AS 60034.1	Yes No No
Comments (please supply additional information for any non-compliances)	
Single Line Diagram (SLD) attached	Yes No No
Existing Onsite Embedded Generating Systems	
Existing Installation details (Prior to this application)	Data
Types	
Capacity and export	
Changes made to legacy generation system	Yes No No





All questions in each applicable section must be answered.	
Details of change	

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 2 – Compliance Checklist

Description	Complies	If No, supply details
Voltage Fluctuation and Flicker	Yes 🗌 No 🗌	
Export Requirements	Yes 🗌 No 🗌	
Special Instructions	Yes 🗌 No 🗌	
Fluctuation and Harmonic Allocations	Yes 🗌 No 🗌	
Power Factor Limits	Yes 🗌 No 🗌	

Compliance with Standard for LV EG Connections

Clause	Description	Complies	5	
4.3	Stand-by hours limit compliance (if applicable)	Yes 🗌	No 🗌	N/A 🗌
4.3.1.3	Power limiting (for partial-export and non-export systems only)	Yes 🗌	No 🗌	N/A 🗌
4.7.2, Table 8	Protection device compliance, IPR functionality and settings	Yes 🗌	No 🗌	N/A 🗌
4.7.6.2	Loss of mains, NVD and backup anti-islanding protection	Yes 🗌	No 🗌	N/A 🗌
4.7.3	Interlocking (if applicable)	Yes 🗌	No 🗌	N/A 🗌
4.7.5	Re-energisation and synchronisation	Yes 🗌	No 🗌	N/A 🗌
4.7.6.1	Standards compliance	Yes 🗌	No 🗌	N/A 🗌
4.7.6.2	Exemptions (please list relevant exemptions authorised for this installation)	Yes 🗌	No 🗌	N/A 🗌
4.10.1.1 – 4.10.1.5	Power Quality	Yes 🗌	No 🗌	N/A 🗌
4.10.3	Power Control Mode settings	Yes 🗌	No 🗌	N/A 🗌
6	Commissioning	Yes 🗌	No 🗌	
7	Operation and maintenance	Yes 🗌	No 🗌	

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.		
Comments (please supply additional information for any non-compliances and settings as required)		
(please supply additional information for any non-compliances and settings as required)		
Commissioning results attached	Yes 🗌	No 🗌

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 3 – Compliance Report – Commissioning

Commissioning shall include the following information and test certificates are recommended for further evidence:

Compliance with Standard for LV EG Connections

System Details	Complies	Data, provide details (attach docs if required)
Installed system meets all criteria outlined in the Energex's Technical Study Report issued for project	Yes No	

Rotating Machine

System Details	Complies	Data, provide details (attach docs if required)
AC Output Voltage from inverter on commissioning	Yes No No	
Input and Output power from rotating machine on commissioning	Yes No	
Re-energisation and synchronisation as per standard	Yes No No	
Rotating machine performed as per approved Operating type (Clause 4.3)	Yes No No	

Protection

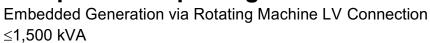
System Details	Complies	Data, provide details (attach docs if required)
Tripping and control scheme logic	Yes No No	
Instrument transformer ratios	Yes No No	
Relay settings as per STNW1174 Table 10	Yes 🗌 No 🗌	
Relay pickup tests	Yes 🗌 No 🗌	
IPR – ROCOF (setting)	Yes 🗌 No 🗌	
IPR – directional power (setting)	Yes No No	
IPR – negative sequence voltage (setting)	Yes No No	
IPR- negative sequence current (setting)	Yes No No	

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

IPR Details	Data			
Make				
Model				
Serial Number				
Comments (please supply additional information for any non-compliance	es and settings	s as required))	
Commissioning results attached			Yes	□ No □
Power Quality				
Power quality test results required to be provided to DNSP			Yes No No	
Where more than one Connection Point is present for a Retail Customer, testing has been completed for each Connection Point Yes □ No □ N/A □				
Power quality raw data provided (.xlsx or .csv form	nat)			Yes No
System Details		Comp	olies	Data, provide details (attach docs if required)
Flicker		Yes 🗌	No 🗌	
Harmonics emissions levels (Testing not required power electronic converter present)	d if no	Yes 🗌	No 🗌	
Voltage Unbalance (%)		Yes 🗌	No 🗌	
Power Factor		Yes 🗌	No 🗌	
Copy of Test Certificates attached				Yes No No





All questions in each applicable section must be ans
--

Interlocking N/A

System Details	Complies	Data, provide details (attach docs if required)
Manual (Key based) or	Yes No No	
Automated	Yes No No	
Prior approved automated design attached	Yes No No N/A	

Embedded Generation via Rotating Machine LV Connection ≤1,500 kVA



All questions in each applicable section must be answered.

Attachment 4 – As Commissioned Drawings

Single Line Diagram and AC Schematics should include

RPEQ Signature	
2. NMI, Site name and address	
3. IPR settings	
Single Line Diagram (SLD) attached	Yes No No
AC schematics attached	Yes No No